

VORTEX / VORTEX II REFERENCE CARD

Parameter Legend:

- **Boldface** = Obligatory
- *Italic* = Optional
- UPPER CASE = As shown
- Lower Case = A variable



Helping a Fast World Move Faster

varian data machines

2722 michelson drive/p.o. box c-19504
irvine/california/92713/(714) 833-2400

PREPARED BY CUSTOMER EDUCATION

98A 9933 071

RTE SERVICE REQUEST MACROS

Abort Task

label **ABORT** 'xx', 'yy', 'zz'

Allocate Reentrant Stack

label **ALOC** *address*
address of reentrant subroutine to be
executed

*Allocate Memory Page (s)

label **ALOCPG** *n*, logical addr, reject addr

Deallocate Reentrant Stack

label **DEALOC**

*Deallocate Memory Page (s)

label **DEALPG** *n*, logical addr, reject addr

Delay Task

label **DELAY** *milli, min, type*
milli 5-millisecond increments
min number of minutes
type 0=time delay expected
1=exit & automatically rescheduled
2=time delay or interrupt
3=time or interrupt or I/O complete

Exit Task

label **EXIT**

Link Background I/O

label **IOLINK** *lungsd, bufloc, bufsiz*
lungsd logical unit number
bufloc address of I/O buffer
bufsiz buffer size

Delay and Reload

label **LDELAY** *milli, min, lun, key*

*Map Memory Page (s)

label **MAPIN** *n*, logical addr, buffer or page, reject addr
buffer=buffer containing page numbers
page=physical page number

Load/Execute Overlay

label **OVLAY** *type, 'xx', 'yy', 'zz'*
type 0=load and execute
1=load and return

*Pass Map 0

label **PASS** *count, from, to*
count number of words
from map 0 fetch address
to user map store address

*Identify Physical Page Number

label **PAGNUM** logical addr

PIM Mask Register

label **PMSK** *pim, mask, opt*
pim pim number
mask interrupt lines
opt 0=enable
1=disable

Resume Task

label **RESUME** 'xx', 'yy', 'zz'

Schedule Task

label **SCHED** *level, wait, lun, key, 'xx', 'yy', 'zz'*
wait 0=no wait, 1=wait
'xx', 'yy', 'zz' task name

Suspend Task

label **SUSPND** *susp*
susp 0=waiting for resume
1=waiting for interrupt
2=waiting for INT. or I/O complete

Set/Fetch Task TIDB Words

label **TBEVNT** *value, disp, c/s*
value mask
disp displacement
c/s clear/set indicator

Time of Day

label **TIME**
A reg. = 5-millisecond increments
B reg. = minutes

*=VORTEX II system only

INPUT/OUTPUT CONTROL

Close File

label **CLOSE** *fcblun, wait, mode*
mode 0=leave
1=update

Data Control Block

label **DCB** *rl, buff, fun*

File Control Block

label **FCB** *rl, buff, acc, key, 'xx', 'yy', 'zz'*
acc 0=direct by logical record
1=sequential by logical record
2=direct by sector number
3=sequential by sector

FUNCTION

label **FUNC** *dcb, lun, wait*

4

OPEN FILE

label OPEN fcb, lun, wait, mode
mode 0=rewind
1=not rewind

Read

label READ cb, lun, wait, mode
cb address of DCB or FCB
wait 1=immediate return
0=suspend I/O complete
mode 0=binary
1=ASCII
2=BCD
3=unformatted

Rewind

label REW cb, lun, wait

Skip Record

label SREC cb, lun, wait, mode
mode 0=forward
1=reverse

Status

label STAT req, err, aaa, bbb, busy
req address of I/O mcaro
err error
aaa EOF, BOD, BOT
bbb EOD, EOT
busy I/O not complete

Write End of File

WEOF cb, lun, wait

Write

WRITE cb, lun, wait, mode

JOB-CONTROL PROCESSOR

Schedule Next Background Task

/ALTLIB, lun, key
must be followed by a /LOAD or /PLOAD

Logical—Unit Assignment

/ASSIGN, I (1)=r (1), i (2)=r (2), . . . , i (n)=r (n)
I (n) lun or name
r (n) lun, name, or physical device name

Comment

/C, comment

Close File (RMD/MT)

/CFILE, lun, key, name
lun must be a global logical unit
name file name closed with update

*Close VTAM Line/Terminal

/CLOSE, lun, id

5

COBOL Compiler

/COBOL, p (1), p (2), . . . , p (n)
Parameter
B suppresses binary object
O object listing
L outputs binary object on GO file
M suppresses data division map
N suppresses source listing

System Concordance

/CONC, L
L list all symbols

DAS MR Assembler

/DASMR, p (1), p (2), . . . , p (n)
Parameter
B suppresses binary object
E multiple-register (V75) instructions
I flags implicit indirect instructions
L outputs binary object on GO file
M suppresses symbol table listing
N suppresses source listing

Data Base Generator

/DBGEN

Dump Background

/DUMP
must be followed by a /LOAD

Execute

/EXEC, D
D dumps all of the background upon completion of execution

Terminate Job

/ENDJOB

I/O Utility Processor

/IOUTIL

Terminate Operation

/FINI
terminates all JCP background operations

File Maintenance Task

/FMAIN

File Maintenance Utility

/FMUTIL

Set Line Count

/FORM, lines

FORTTRAN Compiler

/FORT, p (1), (2), . . . , (n)
Parameter
B suppresses binary object

6

D assigns two words to integers and arrays
H generates code for FPP calls
L outputs binary object on GO file
M suppresses symbol table listing
N suppresses source listing
O outputs object module listing
X compiles conditionally
F generates code for firmware calls

Start Job

/JOB, name

Set Keypunch Mode

/KPMODE, m
m 0=026 mode
1=029

Load Module Generator

/LMGEN, M
M suppresses output of a memory map

Load/Execute Background Task

/LOAD, name, p (1), p (2), . . . , p (3)
name task name
p (1) user parameters

Allocate Extra Memory

/MEM, n

*Open VTAM Line/Terminal

/OPEN, lun1, id, lun2

Pause

/P

Position RMD File

/PFILE, lun, key, name
lun number or name of the logical unit
must be a system defined logical unit which has a global FCB.
name file name

Schedule Background Library Task

label /PLOAD, name, p (1); p (2), . . . , p (n)
name task name
p (1) user parameter

Rewind

/REW, lun, lun, . . . , lun

RGP II Compiler

/RPG, p (1), p (2), . . . , p (n)
Parameter
B suppresses binary object
O include RPG debug features in object module
L outputs binary object on GO file
M suppresses symbol table listing
N suppresses source listing

COBOL Compiler

/COBOL, *p (1), p (2), . . . , p (n)*

Parameter

- B suppresses binary object
- O object listing
- L outputs binary object on GO file
- M suppresses data division map
- N suppresses source listing

System Concordance

/CONC, *L*

- L* list all symbols

DAS MR Assembler

/DASMR, *p (1), p (2), . . . , p (n)*

Parameter

- B suppresses binary object
- E multiple-register (V75) instructions
- I flags implicit indirect instructions
- L outputs binary object on GO file
- M suppresses symbol table listing
- N suppresses source listing

Data Base Generator

/DBGEN

Dump Background

/DUMP

must be followed by a /LOAD

Execute

/EXEC, *D*

- D* dumps all of the background upon completion of execution

Terminate Job

/ENDJOB

I/O Utility Processor

/IOUTIL

Terminate Operation

/FINI

terminates all JCP background operations

File Maintenance Task

/FMAIN

File Maintenance Utility

/FMUTIL

Set Line Count

/FORM, *lines*

FORTRAN Compiler

/FORT, *p (1), (2), . . . , (n)*

Parameter

- B suppresses binary object

5

D assigns two words to integers and arrays

H generates code for FPP calls

L outputs binary object on GO file

M suppresses symbol table listing

N suppresses source listing

O outputs object module listing

X compiles conditionally

F generates code for firmware calls

Start Job

/JOB, *name*

Set Keypunch Mode

/KPMODE, *m*

m 0=026 mode

1=029

Load Module Generator

/LMGEN, *M*

M suppresses output of a memory map

Load/Execute Background Task

/LOAD, *name, p (1), p (2), . . . , p (3)*

name task name

p (1) user parameters

Allocate Extra Memory

/MEM, *n*

*Open VTAM Line/Terminal

/OPEN, *lun1, id, lun2*

Pause

/P

Position RMD File

/PFILE, *lun, key, name*

lun number or name of the logical unit

must be a system defined logical

unit which has a global FCB.

name file name

Schedule Background Library Task

label /PLOAD, *name, p (1), p (2), . . . , p (n)*

name task name

p (1) user parameter

Rewind

/REW, *lun, lun, . . . , lun*

RGP II Compiler

/RPG, *p (1), p (2), . . . , p (n)*

Parameter

B suppresses binary object

O include RPG debug features
in object module

L outputs binary object on GO file

M suppresses symbol table listing

N suppresses source listing

6

Symbolic Source-Editor Task

/SEDIT

Skip File (s)

/SFILE, *lun, neof*

System Maintenance Task

/SMAIN

Skip Record (s)

/SREC, *lun, nrec, direc*

direc F=forward

R=reverse

Set External (RPG II) Indicators (U1-U8)

/SWITCH, *aaaaaaa*

a= 1 for switch ON

0 for switch OFF

x for no change

Write End-of-File Mark

/WEOF, *lun*

*=VTAM only

LOAD MODULE GENERATOR

/LMGEN, *M* (JCP Directive)

LM**

Load Relocatable Object Modules without Re-opening or Repositioning

CLD, *lun, key, file*

key and *file* for RMD only

Load Relocatable Object Modules

LD, *lun, key, file*

file filename

Library Search

LIB, *lun (1), lun (2), key (2), . . . , lun (n), key (n)*

Memory

MEM, *n*

End LMGEN

END, *lun, key*

Overlay

OV, *segname*

Create Task-Identification Block

TIDB, *name, type, segments, DEBUG, ropages*

name task name

type 1=background task

2=foreground task

3=background task in alternate library

segments number of overlay segments

ropages read only page specifier

7

DEBUGGING AIDS

⑧

DG** (TIDB task name, task entry address)

Directive Description

A	Display and change the contents
Ax	Change, but do not display, the contents
B	Display and change the contents
Bx	Change, but do not display, the contents
Cx	Display and change the contents of memory address x
Gx	Load the contents of the pseudoregisters into the respective registers, and transfer to memory address x
Ix, y, z	Initialize memory addresses x through y with the value of z
O	Display and change the overflow indicator
P	Read DEBUG directives from PI unit until EOF
*Rn	Display and change V75 registers
*Rnx	Change, but do not display V75 Registers
Sx,y,z,m	Search memory addresses x through y for the z value, using mask m
Ty, X	Place a trap at memory address y, starting execution at address x
Ty	Place a trap at memory address y, starting execution at the last trap location
X	Display and change the contents
Xy	Change, but do not display, the contents
xxxxxx	Display the contents of memory address xxxxxx
xxxxxx, yyyyyy	Display the contents of memory addresses xxxxxx through yyyyyy

* Extended Instruction Set

SNAP

EXT	SNAP
CALL	SNAP
DATA	start (start of display)
DATA	end (end of display)
DATA	tidb is less than zero if dump of task TIDB is desired, is positive if TIDB dump is to be suppressed

SN** (task TIDB name)

FILE MAINTENANCE

/FMAIN (JCP Directives)

FM**

Add

ADD, lun, key
lun output logical unit
add uses "create" function

Create

CREATE, lun, key, name, words, records
name filename
words words in each record
records number of records

Delete

DELETE, lun, key, name

Enter New File Name

ENTER, lun, key, old, new

Initialize

INIT, lun, key

Input

INPUT, lun, key, file
file name of the RMD file

Note: INPUT must precede ADD

List

LIST, lun, key

Rename

RENAME, lun, key, old, new

SOURCE EDITOR

/SEDIT (JCP Directive)

SE**

Add Record (s)

AD, recno
recno is the number of the record last copied from the IN unit before switching to AL for further copying.

Assign Logical Units

AS, nn=lun, key, file
nn IN, OU, AL
file filename

Compare Inputs

CO, (first, last), limit
limit discrepancy count allowed

Delete Record(s)

DE, recno 1, recno 2

Copy File (s)

FC, nfiles

Gang Load All Records

GA, (first, last), 'string'

⑨

List Records

LI, list
list A=list all out records
C=list only change records
N=suppress listing, except directives

Move Record (s)

MO, recno 1, recno 2, recno 3

Replace Record (s)

REPL, recno 1, recno 2

Rewind

REW, p (1), p (2), p (3)
p (1)=IN, OUT, ALT

Write End Of File

WE

Add String

SA, recno, (first, last), 'string'

Start Sequencing

SE, (first, last), initial, increment

Delete String

SD, recno, (n1, n2, n3)

Sequence Records

SE, (first, last), initial, increment

Stop Sequencing

SE, N

Replace String

SR, recno, (n1, n2, n3), 'string'

INPUT/OUTPUT UTILITY

/IOUTIL (JCP Directive)

IU**

Close File

CFILE, lun, key, name, add
add 0=unchanged
1=updated

Copy File

COPYF, f, iu, im, irl, ou (1), om, orl, ou (2), ou (3), ... ou (n)
im/om 0=binary
1=ASCII
2=BCD
3=unformatted

Copy Record

COPYR, r, iu, im, irl, ou (1), om, orl, ou (2), ou (3), ... ou (n)

⑩

DUMP, r, iu, im, irl, ou

Pack Binary

PACKB, f, iu, im, irl, ou (1), om, orl, ou (2), . . . , ou (n)

Position File

PFILE, lun, key, recl, name

Print File

PRNTF, f, iu, ou (1), ou (2), . . . , ou (n)

Rewind

REW, lun, lun, . . . , lun

Skip File

SFILE, lun, neof

Skip Record

SREC, lun, nrec

Write End Of File

WEOF, lun, lun, . . . , lun

VSORT (SORT/MERGE)

/LOAD, VSORT (JCP Directive)

SORT

INPUT = (lun, filename, key, record length)

OUTPUT = (lun, filename, key, record length)

$$\text{WORK} \begin{Bmatrix} 1 \\ 2 \\ 3 \end{Bmatrix} = (\text{lun}, \text{filename}, \text{key})$$

SORTKEY=(sc (1), ec (1), order (1), . . . , sc (6), ec (6), order (6))

sc (1) starting character (or byte) position

ec (1) ending character (or byte) position

order (1) A=ascending

D=descending

$$\text{INEXIT} = \begin{Bmatrix} \text{YES} \\ \text{NO} \end{Bmatrix}$$

$$\text{OUTEXIT} = \begin{Bmatrix} \text{YES} \\ \text{NO} \end{Bmatrix}$$

ENDSORT

SYSTEM MAINTENANCE

/SMAIN (JCP Directive)

SM**

Input Logical Unit

IN, lun, key, filename (old SGL)

Output Logical Unit

OUT, lun, key, filename (new SGL)

Input Logical Unit (new SGL)

ALT, lun, key, filename (new object)

Add to SGL

ADD, p (1), p (2), . . . , p (n)

p (1) is the name of an object module or control record after which additions are to be made.

Replace SGL

REP, p (1), p (2), . . . , p (n)

p (1) is the name of an object module or control record that is to be replaced.

Delete SGL

DEL, p (1), p (2), . . . , p (n)

p (1) is the name of an object module or control record that is to be deleted.

List Old SGL

LIST

End Input of SMAIN

END, L

L list old SGL

OPERATOR COMMUNICATION

Schedule Foreground Task

;SCHED, task, level, lun, key

Time-Schedule Foreground Task

;TSCHED, task, level, lun, key, time

Attach Foreground Task

;ATTACH, task, line, iew, enable

iew interrupt event word

enable E=enable

D=disable

Resume Task

;RESUME, task

Enter/Display Time-Of-Day

;TIME, time
HH:MM

Enter Date

;DATE, mm/dd/yy

Abort Task

;ABORT, task

Task Status

;TSTAT, task

Task Status (TIDB Words 1 and 2)

TIDB Word	Bit	Meaning of Set Bit
1	15	Suspend interrupt
1	14	Suspend task
1	13	Abort task
1	12	Exit from task
1	11	TIDB resident
1	10	Resident task
1	9	Foreground task
1	8	Protected task
1	7	Task scheduled by time-delay
1	6	Time-delay active
1	5	Task waiting to be loaded (check pointed)
1	4	Task error
1	3	Task interrupt expected
1	2	Overlay task
1	1	Scheduled task upon termination of active task
1	0	Task search-allocated-loaded
2	15	Task opened, but not loaded
2	14	V75 (long TIDB)
2	13	Load overlay
2	12	Background checkpoint I/O wait
2	11	Allocation override flag
2	10	Background being checkpointed
2	9	TIDB not available
2	8	map key assigned
2	7	map key checkpointed
2	6	Delay type 3 request
2	5-0	Task priority level

Assign Logical Unit (s)

;ASSIGN, l (1), r (1), l (2), . . . , l (n)=r (n)

Device Down

;DEVDN, device

Device Up

;DEVUP, device

List Logical-Unit Assignments

;LOLIST, lun (1), lun (2), . . . , lun (n)

SYSTEM MAINTENANCE

12

/SMAIN (JCP Directive)

SM**

Input Logical Unit
IN, lun, key, filename (old SGL)

Output Logical Unit
OUT, lun, key, filename (new SGL)

Input Logical Unit (new SGL)
ALT, lun, key, filename (new object)

Add to SGL
ADD, p (1), p (2), . . . , p (n)
p (1) is the name of an object module or control record after which additions are to be made.

Replace SGL
REP, p (1), p (2), . . . , p (n)
p (1) is the name of an object module or control record that is to be replaced.

Delete SGL
DEL, p (1), p (2), . . . p (n)
p (1) is the name of an object module or control record that is to be deleted.

List Old SGL
LIST

End Input of SMAIN
END, L
L list old SGL

OPERATOR COMMUNICATION

Schedule Foreground Task
;SCHED, task, level, lun, key

Time-Schedule Foreground Task
;TSCHED, task, level, lun, key, time

Attach Foreground Task
;ATTACH, task, line, iew, enable
iew interrupt event word
enable E=enable
D=disable

Resume Task
;RESUME, task

Enter/Display Time-Of-Day
;TIME, time
HH:MM

Enter Date
;DATE, mm/dd/yy

Abort Task
;ABORT, task

Task Status
;TSTAT, task

Task Status (TIDB Words 1 and 2)		
TIDB Word	Bit	Meaning of Set Bit
1	15	Suspend interrupt
1	14	Suspend task
1	13	Abort task
1	12	Exit from task
1	11	TIDB resident
1	10	Resident task
1	9	Foreground task
1	8	Protected task
1	7	Task scheduled by time-delay
1	6	Time-delay active
1	5	Task waiting to be loaded (check pointed)
1	4	Task error
1	3	Task interrupt expected
1	2	Overlay task
1	1	Scheduled task upon termination of active task
1	0	Task search-allocated-loaded
2	15	Task opened, but not loaded
2	14	V75 (long TIDB)
2	13	Load overlay
2	12	Background checkpoint I/O wait
2	11	Allocation override flag
2	10	Background being checkpointed
2	9	TIDB not available
2	8	map key assigned
2	7	map key checkpointed
2	6	Delay type 3 request
2	5-0	Task priority level

Assign Logical Unit (s)
;ASSIGN, I (1),=r (1), I (2), . . . , I (n)=r (n)

Device Down
;DEVDN, device

Device Up
;DEVUP, device

List Logical-Unit Assignments
;IOLIST, lun (1), lun (2), . . . , lun (n)

FILE MAINTENANCE UTILITY

14

/FMUTIL (JCP Directive)

FU**

Dump File
D, lun, key, file, tapelun
file ALL (dump partition)
DIR (dump filename directory)
filename

Load File
L, lun, key, file, tapelun
file ALL (load partition)
DIR (load filename directory)
filename

Rewind
R, lun

End of File
E, lun

Search
S, lun, key, tapelun

Prints
P, lun, key

Release Unused Space
U, lun, key, file

Exit FMUTIL
E

VORTEX LOGICAL UNIT ASSIGNMENTS

NUMBER	NAME	FUNCTION
0	DUM	FOR I/O SIMULATION
1	OC	OPERATOR COMMUNICATION DCONTROL
2	SI	JCP CONTROL
3	SO	SYSTEM OUTPUT MESSAGES
4	PI	INPUT FOR DASMR, FORT, RPG (SOURCE INPUT)
5	LO	OUTPUT LISTING
6	BI	UNIT FOR OBJECT MODULE INPUT
7	BO	UNIT FOR OBJECT RECORD OUTPUT
8	SS	SYSTEM SCRATCH, PASSII SOURCE INPUT UNIT
9	GO	ADDITION COPY OF OBJECT TEXT FOR LOAD & GO MODE
10	PO	COPY OF DASMR SOURCE
11	DI	DEBUGGING INPUT
12	DO	DEBUGGING OUTPUT